

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JUNICHI NAKAMURA

Appeal No. 1997-0837
Application 08/121,116¹

ON BRIEF

Before URYNOWICZ, THOMAS and GROSS, Administrative Patent Judges.

URYNOWICZ, Administrative Patent Judge.

Decision on Appeal

This appeal is from the final rejection of claims 4-11 and 15-20, all the claims pending in the application.

The invention pertains to a smoothed output image sensor.

Claim 4 is illustrative and reads as follows:

A smoothed output image sensor, comprising:

(a) a plurality of neuron MOSFETs, each neuron MOSFET having at least a primary input gate, two or more secondary input gates

¹ Application for patent filed September 13, 1993.

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and an output;

(b) a plurality of photoelectric conversion elements, each corresponding to one of the plurality of neuron MOSFETS;

(c) each neuron MOSFET having its primary input gate coupled to its corresponding photoelectric conversion element and having each of its secondary input gates coupled to a different one of the plurality of photoelectric conversion elements;

(d) a smoothed output;

(e) a first switch coupled to the output of each of the plurality of neuron MOSFETS for selectively coupling each of the plurality of neuron MOSFETS to the smoothed output of the image sensor.

The references relied upon by the examiner as evidence of obviousness are:

Ingham et al. (Ingham)	3,643,215	Feb. 15, 1972
Holmes et al. (Holmes)	3,944,977	Mar. 16, 1976
Umeda et al. (Umeda)	4,831,658	May 16, 1989
Shibata et al. (Shibata)	5,258,657	Nov. 02, 1993
		(filed Jan. 06, 1992)

System Issues in the Implementation of Sensory Neural Network Photodetector Arrays, Robert B. Darling, et al. (Darling), IEEE Pacific Rim Conference on Communications; May 9-10, 1991.

Claims 4-8, 10 and 11 stand rejected under 35 U.S.C. § 103 as unpatentable over Darling in view of Shibata and Umeda.

Claims 15-20 stand rejected under 35 U.S.C. § 103 as unpatentable over Darling in view of Shibata, Umeda and Holmes.

Claim 9 stands rejected under 35 U.S.C. § 103 as unpatentable over Darling in view of Shibata, Umeda and Ingham.

The respective positions of the examiner and the appellant

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with regard to the propriety of these rejections are set forth in the examiner's answer (Paper No. 14) and the appellant's brief (Paper No. 12) and reply brief (Paper No. 15).

Appellant's Invention

Appellant's invention is adequately set forth at pages 3-6 of the brief.

Opinion

After consideration of the positions and arguments presented by both the examiner and the appellant, we have concluded that the rejection of independent claims 4 and 15 should not be sustained.

With respect to claims 4 and 15, the examiner observes that Darling discloses the implementation of sensory neural network photodetector arrays and relies upon the theory to the effect that in combining the teachings of Darling and Shibata, each neuron MOSFET (Shibata) would inherently have a gate coupled to its corresponding photoelectric conversion element. However, in relying on the principle of inherency, the examiner must provide a basis in fact and/or technical reasoning to support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. In

re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). In our opinion, the examiner has not discharged that initial burden.

Shibata does not provide any detailed disclosure of how its neuron MOSFETs are to be connected to a plurality of photoelectric conversion elements. In Figure 1, Darling discloses a plurality of cells, each cell comprising parallel transistors. Each cell has two outer transistors and a central element which may or may not be a transistor. Although the central element has no gate in Figure 1, because Darling describes the cells at the top of column 2 as typified by a parallel interconnection of transistors, it would appear that the central element is also a transistor. However, in Darling the central element or transistor has no gate coupled to its corresponding photoelectric conversion element. Accordingly, the combination of Darling and Shibata would not appear to yield a structure wherein each neuron MOSFET has an input gate coupled to its corresponding photoelectric conversion element. Although it may be correct that combining the teachings of Darling and Shibata would necessarily result in a structure wherein each neuron MOSFET inherently has a gate coupled to its corresponding photoelectric

conversion element, the examiner has not provided a basis in fact and/or technical reasoning to reasonably support that conclusion.

In re King, supra.

The examiner also takes the position to the effect that the multiplexing circuits of Darling comprise a first switch coupled to the output of each of a plurality of neuron MOSFETs for selectively coupling each of the plurality of neuron MOSFETs to the smoothed output of the image sensor. Although this may be the case, it has not been shown that it is necessarily so. In re King, supra. The examiner argues in his brief that a switch must be provided by which output signals of the MOSFETs are made available to "other circuits within the system which use the output signals". However, there is no disclosure regarding what the "output multiplexing architecture" of Darling comprises, and we are not convinced that the "other circuits" referred to by the examiner comprise a smoothed output to which each of the plurality of MOSFETs is selectively coupled.

Umeda, Holmes and Ingham, considered separately or together, do not compensate for the shortcomings of Darling and Shibata.

Whereas the remaining claims depend from either claim 4 or claim 15, the rejection of these claims will not be sustained.

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REVERSED

STANLEY M. URYNOWICZ, JR.)	
Administrative Patent Judge)	
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JAMES D. THOMAS)	
Administrative Patent Judge)	APPEALS AND
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